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Florida Agricultural Experiment Station

TOMATO SEED-BEDS—SPRAYING OF.

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Young tomato plants in seed-beds are frequently quite seriously injured by "rust" due to a fungus known as *Alternaria solani.* This may be prevented successfully by thoroughly spraying the seedlings with Bordeaux mixture. The fungus lives on the surface and in the interior of the leaf, forming at first mere dots, which later enlarge to brown, irregular, rusty looking areas. In moist weather the rusty areas may assume a velvety appearance due to the development of numerous spores.

Preventive measures are the only practicable means that can be employed in combating tomato rust and similar diseases. Spraying the seedlings in the seed-bed is a preventive measure, and its importance may readily be understood from the following considerations:

1. When the fungus is just starting on the surface, before it has entered the leaf, it can be easily killed, but after it has once entered the leaf tissue and formed the rusty spot it continues to grow internally and enlarge the spot even when the leaf is covered with Bordeaux mixture. Bordeaux mixture is of value in this case, not in curing spots already formed, but in preventing other spots from forming.

2. When the seedlings have become infected with rust in the seed-bed, it is transferred with the plants to the field, where it continues to do much damage. The rusty areas enlarge and the infection spreads until the plants are very materially injured. The disease is also much harder to combat in the field because of the larger area to be sprayed.

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It is therefore highly important that the seed-beds should be thoroughly sprayed even before any sign of the rust appears. The first spraying should be done as soon as the first leaf is well formed. The frequency of spraying necessary to prevent rust depends on conditions of weather and moisture. It should probably vary from twice a week in moist, rapidly-growing weather to once a week or once in ten days in drier, cooler weather. Bordeaux mixture of the formula: 3 pounds copper sulphate and 3 pounds of rock lime to 50 gallons of water has proven as successful as a stronger solution in preventing the rust. See Bulletin 76, page 238 of the Florida Agricultural Experiment Station, for directions in making Bordeaux mixture.

Spraying seed-beds with Bordeaux mixture in addition to preventing "rust," will also prove beneficial in preventing infection of other fungi such as "leaf mould" *(Cladosporium fulvum)*.

In case of "damping off," which is due to certain fungi and not to bites of insects as is often supposed, the bed should be worked up to make the surface soil dry and loose, and should be sprayed with an ammoniacal solution of copper carbonate, the formula for which is: 5 ounces of copper carbonate, 3 pints of ammonia of 26 degrees strength to 50 gallons of water. See Bulletin 76, page 239 of Florida Agricultural Experiment Station, for directions for preparation of this fungicide.

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